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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,417

03/26/2004

Holger Heuermann

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06/29/2005

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EXAMINER

BARAN, MARY C

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/810,417	Applicant(s) HEUERMANN, HOLGER	
	Examiner Mary Kate B. Baran	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 09 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Specification***

2. The abstract of the disclosure is objected to because:
- (a) It exceeds 150 words.
  - (b) Line 15, "analyser" should be – analyzers –.
- Correction is required. See MPEP § 608.01(b).
3. The disclosure is objected to because of the following informalities:
- (a) On page 3 lines 11-12, "necessary first of all for" should be – necessary for –.
  - (b) On page 3 line 39, "an" should be – a –.
  - (c) On page 6 line 1, "on wafer" should be – on a wafer –.
  - (d) On page 7 line 9, "In the following (???) the" should be – The –.
  - (e) On page 8 lines 23-24, "dissadvantageous" should be – disadvantageous –.
  - (f) On page 9 line 27, "In the following this" should be – This –.

- (g) On page 10 line 35, "usedwhen" should be – used when –.
  - (h) On page 12 line 35, "Claim" should be – claim –.
  - (i) On page 13 line 22, "the mathematics" should be – mathematics –.
  - (j) On page 15 lines 12-13, "to be deleted" should be – deleted –.
- Appropriate correction is required.

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

### ***Claim Objections***

6. Claims 1 and 2 are objected to because of the following informalities:
- (a) Claim 1 page 19 line 30, "combination" should be – combinations –.
  - (b) Claim 1 page 20 lines 14-15 and claim 2 page 21 lines 24-25, "mathematical determinate" should be – mathematically determined –.
  - (c) Claim 1 page 20 line 11, "reflexion" should be – reflection –.
- Appropriate correction is required.

7. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot be dependent on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim 6 not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 1 page 19 lines 32-36 and claim 2 page 21 lines 4-7, both claims recite the language, "a further calibration measurement is carried out at an n-one-port, which is realized by means of n known, if appropriate different, impedances." It is not clear what the phrase "if appropriate different" is referring to.

Referring to claims 1-5, the claims recited the language "n known" and "n unknown". It is not clear if "n" refers to the known or unknown number of measurement ports, the known or unknown variables in the mathematical formulas used to calibrate the VNA, or if it is a typographical error and should be "a".

Regarding claims 1-5, the phrase "for example" or as claimed "e.g. so-called wave terminations with 50 ohm, M=Match" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

9. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Adamain (U.S. Patent No. 5,578,932).

Referring to claims 1-5, Adamain teaches a method for calibrating a vectorial network analyzer having multiple ports with multiple measurement locations (see Adamain, column 7 line 66 – column 8 line 4), wherein the port data is measured using either reflection data (see Adamain, column 9 lines 14-18) or transmission data (see Adamain, column 9 lines 20-40); connecting the measurement ports in any order via a switch (see Adamain, Figure 12); accurately calibrating the VNA, using models which are generated with the error coefficients and the additional impedance (see Adamain, column 11 lines 3-9) and transferring this data in the form of a scattering matrix (see Adamain, column 16 lines 1-12); measuring the data by means of a thru line or a short matched line which is connected between each of the possible measurement port

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combinations (see Adamain, column 16 line 60 – column 17 line 10); measuring the data using wave impedances of 50 ohms (see Adamain, column 17 lines 7-10); measuring a short circuit (see Adamain, column 16 line 60 – column 17 line 10); measuring an open circuit (see Adamain, column 16 line 60 – column 17 line 10); and mathematically determining the reflection based on the open circuit or short circuit terminations (see Adamain, column 10 lines 45-54).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Ferrero et al. teach a new implementation of a multiport automatic network analyzer.

(b) Rodriguez teaches comparison between the ripple technique and the direct calibration method for characterization of directional devices.

(c) Boudaif et al. teach a method and apparatus for performing multiport through-reflect-line calibration and measurement.

(d) Blackham et al. teach an error correction method for reflection measurements of reciprocal devices in vector network analyzers.

(e) Bockelman teaches a calibration technique for a network analyzer.

(f) Grace et al. teach an internal automatic calibrator for vector network analyzers.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Kate B. Baran whose telephone number is (571) 272-2211. The examiner can normally be reached on Monday - Friday from 9:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

23 June 2005

*Hal Wachsman*  
HAL WACHSMAN  
PRIMARY EXAMINER  
*AV2857*